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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/814,331	03/21/2001	Kong Fok Chong	21046.P007	3789
35830	7590	04/01/2004	EXAMINER	
LAWRENCE N. GINSBERG 21 SAN ANTONIO NEWPORT BEACH, CA 92660-9112			PARKER, FREDERICK JOHN	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 04/01/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/814,331

Applicant(s)

CHONG ET AL.

Examiner

Frederick J. Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-26 is/are pending in the application.
4a) Of the above claim(s) 14-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-13 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Response to Amendment

Election/Restrictions

1. Non-elected claims 14-26 should be canceled.

Claim Rejections - 35 USC § 112

2. The amendments in response to the 35 USC 112/ 1st and 2nd Paragraph rejections of the Previous Office Action are acknowledged and appreciated, and the Examiner accordingly withdraws the rejections.

3. The prior art rejections of the previous Office Action have been withdrawn in view of Applicants' claim amendments, and are replaced by the new rejections which follow:

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leach US 5470609 in view of Honjo et al US 3911170, alone or further in view of Hoebeke et al US 5525370.

Leach et al discloses a method for repairing/ treating a plastic object containing **porosity** (abstract, line 10) by applying powder coating material to infiltrate the **porosity or other defects** so that a normal surface contour is assumed, see Col. 2, 6-18; and then heat curing the powder composition (col. 2, 25-30). The powder used may be heat-curable epoxy, polyester, or acrylic-based compositions with cross-linking agents (hardeners), col. 3, 3-32). As to claim 2, smoothing by sanding of rough or jagged features is disclosed on column 4, 7-18. Leach teaches on column 5, 35-37 that the coated product "can be painted, coated, or otherwise finished in accordance

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with the required production specifications”, which would have reasonably suggested to one of ordinary skill to apply conventional coating materials such as a lacquer to attain a desired degree of gloss per claim 3, and to apply the coatings (encompassing graphics) by conventional methods such as printing in accordance with claim 5. Furthermore, since Leach et al teaches a wide range of polymeric plastic materials, including those which are UV curable (col. 4, 39), it would have reasonably suggested UV-curable lacquers because they are conventional and known compositions for topcoats on substrates. Subsequent application of an additional “external coating” of a curable polymer thereon is not taught.

Honjo et al teaches the need for dual coating of porous materials to remove pinholes and essentially eliminate penetration of liquids into the coated articles. At the outset, the teachings are directed to “processing a porous material” in general without limitation, the use of recording paper being expressly cited as being “exemplary” (col. 1, 5-12 and col. 4, 43-46). A porous article is coated with a polymeric film forming resin which is nearly capable of eliminating porosity; the coated body is then further coated with applying a “pinhole filling dispersion” comprising a liquid carrier containing resin particles without being “especially limited (col. 4, 6), preferably in the range of 0.5-5 microns (col. 4, 40-42). The dual coated article is thermally treated.

The issue of specific surface roughness values (Ra) is not cited. However, Leach et al teaches the importance of the coated surface being “smoothed” (col. 2, 34; col. 4, 10-19) and the use of standard buffing and finishing to “obtain a very smooth surface”. While not exactly defined, it is the Examiner’s position that a surface of Ra 7-10 microns would reasonably be considered to be “very smooth”. Furthermore, the pinhole filling dispersion is taught to contain particles from

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about 0.1 micron to below 10 microns, preferably 0.5-5 microns which would necessarily provide a surface finish overlapping that of claim 1 step (d). The exact surface finish would have been dependant upon the end-use application, as would have been apparent to the skilled artisan.

Further, Leach teaches the use of polyester powder and the coatings of Honjo et al are not especially limited, and one of ordinary skill would have selected a coating compatible with the first coat of Leach et al, so that a polyester would have been an obvious choice as the filling dispersion when the initial coating is a polyester. Polyesters are known in the art to provide matte finishes, and hence it is the Examiner's position that it would have been obvious to use a suitable polyester powder in the filling dispersion to provide an external matte finish on the coating.

Although it is the Examiner's position that polyester coatings are inclusive of matte finish coatings, he nonetheless provides as support Hoebeke et al as an optimal support reference which explicitly teaches polyester coating powders for providing smooth, defect-free coatings with matte finishes (abstract; col. 1, 9-35 & col. 8, 6-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Leach et al by incorporating the additional pinhole filling dispersion coat as taught by Honjo et al using polyester coating powders to form a matte finish as supported by Hoebeke et al to provide a smooth surface coating which eliminates pinhole porosity and provides an aesthetic matte finish.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leach et al in view of Honjo et al US 3911170, alone or further in view of Hoebeke et al US 5525370 and further in view of the Admitted Prior Art (APA).

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Leach et al, Honjo et al and Hoebeke et al are cited for the same reasons discussed above, which are incorporated herein. Forming the plastic object of nylon using selective laser sintering is not taught. However, page 1, 16-21 states that nylon plastic prototype articles a “typically produced using selective laser sintering” but assume an undesirable roughened surface. Since Leach et al teaches to infiltrate porosity, uneven surfaces, and other defects in plastic objects without limitation, and the roughened surface of the APA articles are due to defects and porosity, it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of prior combination of references on nylon plastic prototype articles produced using selective laser sintering as disclosed by the APA because of the expectation on the part of one of ordinary skill to form a surface with a smooth, in-filled, essentially pore-free surface.

1. The prior art does not teach nor reasonably suggest the subject matter of claims 9-13 to infiltrate porosity of a plastic porous and miniature stepped prototype with a curable polymer; followed by curing; and then applying an external curable polymeric coating to fill up the miniature steps from prototype formation, resulting in a smooth surface; and curing the coating.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**


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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 571/272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Frederick J. Parker
Primary Examiner
Art Unit 1762

fjp